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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,633	06/08/2001	Preeti G. Lal	PC-0040 CIP	9282

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EXAMINER
SLOBODYANSKY, ELIZABETH

ART UNIT	PAPER NUMBER
1652	9

DATE MAILED: 09/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/877,633	LAL ET AL.	
	Examiner	Art Unit	
	Elizabeth Slobodyansky	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 21-23* is/are pending in the application.

4a) Of the above claim(s) *7-12 and 21-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The instant application is a CIP of copending application 09/840,787.

The preliminary amendment filed July 22, 2002 amending the specification to correct typographical errors, canceling claims 13-20 and amending claims 2 and 7 and adding claims 21-23 has been entered.

Claims 1-12 and 21-23 are pending.

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1, 3-6 and claim 2(a), drawn to a polynucleotide encoding SEQ ID NO: 1, a vector containing it, a host cell transformed with the same, a method of making a protein using said cell and methods of use of a polynucleotide, classified in class 435, subclass 6.

II. Claim 2(b) , drawn to a polynucleotide of SEQ ID Nos: 3-8, classified in class 536, subclass 23.5.

III. Claims 7-12 and 21-23 , drawn to hybridization methods using a polynucleotide encoding SEQ ID NO: 1, classified in class 435, subclass 6.

For invention II above, restriction to one of SEQ ID NOs: 3-8 is also required under 35 USC 121.

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions, represent structurally different polynucleotides. Therefore, where structural identity is required, such as for hybridization or expression, the different sequences have different effects.

Inventions I and III are related as product and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the polynucleotide of invention I can be used in a materially different process such as one in which the polynucleotide is used to transform a bacterial host cell for heterologous expression of the polypeptide as in invention I.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their divergent subject matter, fall into different statutory classes of invention, and are separately classified and searched, restriction for examination purposes as indicated is proper.

During a telephone conversation with Dr. Lynn Murry on September 9, 2002 a provisional election was made with traverse to prosecute the invention of Group I,

claims 1, 3-6, and 2(a). Affirmation of this election must be made by applicant in replying to this Office action. Claims 2(b), 7-12 and 21-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

Drawings

The drawings filed on June 8, 2001 have been approved by Draftsperson.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3-6 and claim 2(a) are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility, a credible asserted utility or a well established utility.

Claims 1, 3-6 and claim 2(a) are directed to or depend from a DNA encoding SEQ ID NO:1. Applicants disclose a human nucleic acid sequence of SEQ ID NO: 2 encoding the protein having the amino acid sequence of SEQ ID NO:1. The asserted utility for SEQ ID NO:2 is as diagnostic of cancers, particularly lymphoma and cancer of the bladder, colon, kidney, ovary, and testis (page 3, lines 4-5). The specification teaches that SEQ ID NO:1 has 55% identity to both high-glucose-regulated protein 8 and NY-REN-2 antigen (page 8, lines 32-33). There is no additional data to support any function for the protein of SEQ ID NO:1. Neither high-glucose-regulated protein 8 nor NY-REN-2 antigen are used as diagnostic of cancer. The specification discloses the expression of SEQ ID NO:2 in various libraries, each library constructed from the tissue removed from a single individual. With regard to lymphoma (one library), expression was two-fold greater than in activated lymphocytes and six-fold greater than in untreated or non-activated T-cells (page 32). The specification teaches that "no expression was seen in activated in three other libraries made from activated T-cells (page 32, line 31). With regard to cancer of the colon, the specification teaches that in metastatic cancer (one library) the expression was higher than in contained tumor (one library) and two-fold greater than in normal tissue (page 32, line 33, through page 33, line 18). With regard to cancer of the bladder, the expression is higher in one library in transitional cell carcinoma of the bladder (BADTUT08) than in normal tissue (page 33). With regard to cancer of the kidney, the expression is higher in one library in Wilms'

tumor, slightly higher in one library in renal cell carcinoma and less high in two other libraries in renal cell carcinoma compared with one library from normal cortex. With regard to the ovary, only in one metastatic endometrial cancer library and not in other cancerous and non-cancerous ovarian libraries the expression was greater (page 34). With regard to the testis, one library from testis tumor has higher expression than one library from embryonal carcinoma, the latter one higher than in normal tissue. Thus, it appears, that the specification presents data mostly obtained from one individual (one library) and compares it to library/libraries from other individuals. Unless the data are statistically significant, it is impossible to know whether the expression is indeed diagnostic of any cancer. It is known in the art that the expression of a protein can vary from one individual to another. On the other hand, in the state of cancer, the expression of most proteins is aberrant. Therefore, the specification provides no guidance as to how to correlate the expression of SEQ ID NO:2 and the specific cancer. Said correlation is not established in the prior art.

While the expression of SEQ ID NO:2 is may be indicative of cancer, it may be due to other conditions as well. The expression of a gene can be affected by various conditions not necessarily associated with or occurring in any type of cancer. Overall, SEQ ID NO:2 appears to be expressed or not expressed in cancerous as well as non-cancerous tissues (*supra*, and page 34, lines 38-40, for example).

Thus, there is no showing in the specification that the expression of SEQ ID NO:2 is specifically occurring in lymphoma and cancer of the bladder, colon, kidney, ovary, and testis and not other diseases or in healthy condition. Alternatively, there is no showing that the expression of SEQ ID NO:2 parallels the expression of any gene used as a direct diagnostic tool for any type of cancer.

However, in order for a polynucleotide to be useful, as asserted, for diagnosis of a disease, there must be a well-established or disclosed correlation or relationship between the claimed polynucleotide and a disease or disorder. The presence of a polynucleotide in tissue that is derived from cancer cells of one individual is not sufficient for establishing a utility in diagnosis of disease in the absence of some information regarding a correlative or causal relationship between the expression of the claimed cDNA and the disease. If a molecule is to be used as a surrogate for a disease state, some disease state must be identified in some way with the molecule in a statistically significant manner. There must be some expression pattern that would allow the claimed polynucleotide to be used in a diagnostic manner. Many proteins are expressed in normal tissues and diseased tissues. Therefore, one needs to know, e.g., that the claimed polynucleotide is either present only in cancer tissue to the exclusion of normal tissue or is expressed in higher levels in diseased tissue compared to normal tissue (i.e. overexpression). Evidence of a differential expression might serve as a basis for use of the claimed polynucleotide as a diagnostic for a disease. However, in

the absence of any disclosed relationship between the claimed polynucleotide or the protein that is encoded thereby and any disease or disorder and the lack of any correlation between the claimed polynucleotide or the encoded protein with any known disease or disorder, any information obtained from an expression profile would only serve as the basis for further research on the observation itself.

Thus, obtaining of theoretically desired result of diagnosing lymphoma and cancer of the bladder, colon, kidney, ovary, and testis by measuring the expression of SEQ ID NO:2 is unpredictable based on the instant disclosure. A method for diagnosing of lymphoma and cancer of the bladder, colon, kidney, ovary, and testis would require or constitute carrying out further research to identify or reasonably confirm that cancer can be diagnosed using a DNA encoding SEQ ID NO:1.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-6 and 2(a) are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Slobodyansky whose telephone number is (703) 306-3222. The examiner can normally be reached Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Ponnathapura Achutamurthy, can be reached at (703) 308-3804. The FAX phone number for Technology Center 1600 is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Center receptionist whose telephone number is (703) 308-0196.

E. Slobodyansky

Elizabeth Slobodyansky, PhD
Primary Examiner

September 9, 2002